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1961

## Laotian Health Problems

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LAOS PROJECT

Paper No. ~~19~~ 20

LAOTIAN HEALTH PROBLEMS

( See Laos Project Paper No. 10 for related statistics )

1961

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LAOTIAN HEALTH PROBLEMS

Laos shares with most other so-called underdeveloped countries what in western terms would be defined as major health problems. There is high incidence of infant mortality, endemic malaria, diseases of the gastro-intestinal tract and malnutrition. Table 1 summarizes illnesses which occur in Laos and their relative importance in the over-all health picture. No precise health statistics have been published; what follows, therefore, is an attempt to summarize available information, including unpublished government reports. Also discussed are traditional Laotian attitudes toward disease and a brief survey of modern medicine facilities and programs.

To gain perspective on the situation in Laos today, it is interesting to note the situation sixty years ago when the French began their rule in Laos.

At the beginning of the rainy season the body is fatigued after the excessive drought and heat of the preceding two months, and is predisposed to attack by the fever-bearing mosquitoes and various bacillae for which river water serves as a vehicle after it has watered the vegetation. It is then that the many different kinds of fever strike....These attacks of malaria end, in the long run, by damaging even those who are most robust in appearance, especially if they suffer from any kind of stomach, liver or intestinal disorder. It is also at this time of the year, as well as during the first cold spells, that diarrhea occurs....

Cholera is also endemic as is smallpox. Very few persons above a certain age have escaped this disease....

Goiter is widespread among the mountainfolk. One sees men, women and even children afflicted with monstrous double and triple goiters, the volume of which often exceed that of a man's head....

Syphilis is also prevalent having been imported by Siamese soldiers....<sup>1</sup>

Today the health problems remain substantially the same, with the exception of smallpox which seems to have been fairly well controlled as a result of vaccination programs carried out by the French, beginning in 1898. Medical stations manned by French physicians and local Lao assistants were set up in Khong (in the extreme south), Vientiane and Luang Prabang at about the same time.

#### General Health Problems

Since there are no official government statistics on infant mortality, it may be of interest to refer to those in Northeast Thailand where many conditions approximate those in Laos (although in general, of course, Laos is much less developed). The Thai Statistical Yearbook of 1952 shows a decline from 98.7 in 1944 to 68.1 in 1948, which is low when compared, for example, to the Indian figure of 176. For Laos one observer places infant mortality at from 55 to 65 percent. An American doctor who recently worked in Laos makes the following estimate:<sup>2</sup>

No statistics exist on fetal mortality for Laos, but I would estimate them to be about like this: fifty percent of pregnancies do not go to completion. Of one hundred babies conceived, only fifty will be born alive. Of these fifty, twenty will die during infancy from smallpox, cholera, malnutrition, whooping cough or pneumonia. Of the thirty left, ten will die during childhood from malaria, trauma or dysentery.

The techniques of contraception are unknown to Laotian villagers. This is also true for most of the educated officials. As a result, a woman may become pregnant about every eighteen months during her child-bearing period. In northern Laos a woman will commonly have as many as six or seven children, and those who have had a dozen or more are not uncommon. Rarely will more than half of them sur-

vive to maturity, and quite frequently the proportion is less.

Malaria is without doubt the major health problem in most of Laos. This fact shows up clearly in medical reports. For example, in Luang Prabang Province in 1958, out of some 73,099 "consultations" including visits to rural clinics, 30,183 or 41 percent were for malaria. At Xieng Ngeun near Luang Prabang town, the Filipino Operation Brotherhood team there noted: "Some four thousand patients came for treatment. Most of them were suffering from upper and lower respiratory tract infection, parasitic infections, malnutrition, pulmonary tuberculosis, conjunctivitis, malaria and gonorrhoea."

In Sam Neua another team reported, "The prevalent diseases encountered are: respiratory, malnutrition, gastro-intestinal and dental caries. These diseases are mainly caused by poor water supply, improper disposal of waste, and lack of personal hygiene."

At Nam Bac in Luang Prabang Province a third team stressed malaria and gastro-intestinal diseases as the most important in that area.

Even in the towns children are seldom born in hospitals. The help of western-trained medical personnel, when available, is not sought unless the midwife has proved unable to do her job. Such is the case even in the royal capital, where the hospital has a small maternity ward and where the services of both French and Lao personnel are available.

Procedures followed after a Lao birth have been described by Dr. Dooley.<sup>3</sup>

To the Laotian midwife, the job is over once the baby is born. The child is wrapped and placed in a blanket, ashes are rubbed on its forehead and the grandfather blows into the infant's ear to impart wisdom. Meanwhile, the mother who has given birth to the baby while squatting upright on a stool, lies neglected and often hemorrhaging critically... The child's umbilical cord is cut with two sharp pieces of bamboo, which are often dirty<sup>4</sup>...the midwife rubs the open end of the cord in a powder made of earth and ashes. It is believed that when this is rubbed into the cord, the child will absorb some of the power and strength of the trees, and of the spirits of the ancestors who are buried in the soil. Ghastly as this seems from the standpoint of sterility, it is astonishing that we never saw a single case of an infected umbilicus.

Should the child survive early infancy, one of the great dangers to its health is an infected water supply. Water is traditionally boiled for women during advanced pregnancy and the post-labor period in the belief that boiled water increases the supply of mother's milk.<sup>5</sup>

Although herb tea is popular in some rural areas, it is not the villagers' main source of water. In the course of several dozen interviews, one instance was found of a nai ban near Luang Prabang town, who boiled his water and kept it in a thermos jug. A few others use alum to remove mud and other visible impurities. Most Lao villagers obtain drinking water directly from the river. It is customarily stored in a large earthenware crock kept on a platform on a post in front of the house. The outsides of these pots are usually partially covered with moss and lichens which help keep the water cool but which hardly promote sanitary conditions. The common dipper is made out of a discarded tin can. Frequently the water crock is covered with a board or a scrap of woven matting in an attempt to keep out lizards and other small pests.

Aside from the usual amount of soil the river carries in

suspension, which increases considerably during the rainy season, the rivers are also used for bathing, for washing dishes and water buffalo, and finally as a latrine. This is true even in a major town such as Luang Prabang. At a Mekong village at sundown, it is not uncommon to see half the village women bathing and doing laundry and young girls filling pails or bamboo tubes, all in the same area.

These conditions, while picturesque, present major problems to the traveler. The safest beverage is fresh coconut milk drunk directly from the shell. Local alcohol is much less reliable, having been prepared by pouring river water into a crock of fermented rice covered with husks and ashes, Guests partake of the rice alcohol by sucking through one of several long reed straws shared by the village leaders.

While drinking water is not pure, the people themselves keep their bodies clean by daily bathing. Western style soap and soap-powders are in common use. Most villages are reasonably clean, thanks to the scavenging chickens, pigs and dogs. Some homes even have small woven baskets attached to the verandas to collect trash. In general, however, Lao villages are not as clean as the villagers themselves.

Concerning the disposal of body wastes, the river is frequently used for this purpose. Even in most of the villages near Luang Prabang town, outhouses are virtually unknown.<sup>6</sup> They are lacking in the compounds of most households in the royal capital itself.

Concrete outdoor latrines are expensive, estimated to cost as much as 10,000 kip, a very large expenditure for the average town dweller. In many cases Lao villages are cleaner than the towns, for except for roadside ditches sewage systems are non-existent. Unlike Vientiane, however, Luang Prabang town does have a municipal water system which functions for a few hours each day, and empty gasoline drums are used to store water. Under conditions such as these it is not surprising that there are outbreaks of dysentery and other diseases at the beginning of the rainy season.

In a survey that was conducted in Northeast Thai villages by the Ubol Fundamental Education Center, it was found that about 95 percent of the population sampled had no latrine facilities.

They use the forest, the bushes, the fields, the ditch, the pond, the roadside, or any place that happens to be convenient...this habit bears no relation to the income level or village status. Only the teachers who, due to their better education and different standards of hygiene often possess a latrine, form an exception to this general rule. The result inevitably is that much of the land and the water that drains from it is polluted.<sup>7</sup>

In the towns regular garbage collection is unknown. In Luang Prabang and Vientiane much of the garbage is simply thrown down the Mekong embankment, and when the water level rises during the monsoon season much of the garbage is washed away. This offers an excellent breeding place for rats and other types of vermin. While the scenery along the river banks is very appealing, the westerner is often repelled by the odor.

Buddhism as interpreted by the Lao does not appear to attach any particular value to cleanliness per se, so that the wat compounds are often repositories for considerable amounts of garbage.

This situation is quite variable, with Luang Prabang much better off in this respect than Vientiane.

In urban areas dogs are a significant health problem, and rabid dogs are not uncommon. A difficulty here is that while the Lao give no particular care to their animals and do not treat them when they are ill, neither do they kill lame or infected animals. Therefore, unfortunate animals in all stages of disease can be seen freely roaming the streets.

In Khmu and Meo villages especially, water is a very scarce commodity, and body cleanliness often leaves much to be desired. Visiting westerners are often called upon to treat festering sores of a type not found among the Lao. Most of the mountain peoples' water supply is hauled by girls and women from a distance as far as a mile away. Sections of bamboo are used as water containers, which the Meo strap to their backs. In an attempt to avoid these long trips, some Meo dig basins to catch rainwater on their mountain tops. These are often simply dirt holes with the sides packed down. They are regarded as private property and are bought and sold. In bad years, when the traditional water sources dry out, the Meo are obliged to use horses to haul water from as far as two hours journey away. The Meo are a resourceful people, however, and in some villages near mountain streams they have arranged a series of bamboo conduits so that water flows directly to their doors. Location of a water supply is a factor in the selection of a village site.

Malnutrition is prevalent in Laos. As was brought out in the preceding paper (see Laos Project Paper No.18), villagers prefer polished rice to the more nutritious unpolished kind. Farmers claim that it not only tastes better, but that the latter has unpleasant associations in that it is the kind served to prisoners.<sup>8</sup> Most Lao machine-mill only that rice which they wish to sell, and rice for home consumption, processed by simple foot-mills, only partially removes the nutritional value. Even so, there are serious deficiencies, particularly among tribal peoples.

The people of this country /tribal areas around Nam Tha/ live on the edge of starvation. They seem to have no storage element for vitamins, fats or proteins. Only a few days of illness throws them into a negative balance. Beri-beri, a vitamin B-1 deficiency, was our chief complaint. Vitamin deficiencies were also the cause of much of our eye complaints.<sup>9</sup>

An extreme form is Kwashiorkor's disease, fairly common in the tropics. Metabolism fails, muscles waste away, liver and spleen are enlarged, the abdomen swells and heart and circulation are damaged. Dooley reports a case of this disease in an infant, due to the fact that the mother had fallen ill and was unable to nurse the baby, who, from the age of six months was fed only rice and water.

Upper respiratory infections including colds and sometimes fatal pneumonia are common. Particularly in the mountains the winter months are often very cold and temperatures approach freezing. Blankets and warm clothing are at least partially lacking among all groups.

Fevers are considered "normal." Some surveys have shown rates as high as eighty percent among children, and its effect is evid-

Diseases such as yaws, although common, can be cured, according to Dr. Dooley, with "one shot of penicillin and two bars of soap." The arresting of leprosy, a disease unfortunately all too prevalent in Northeast Thailand as well as Laos, is difficult if it is undertaken at all. There are several leper villages in Laos, where the diseased persons have been grouped by the government in an effort to segregate them. Some Lao medical personnel are supplied with drugs, but they do not appear anxious to visit such villages for fear of becoming infected themselves. One of these leper colonies is located a few hours downstream from Luang Prabang and is occasionally visited by American Protestant missionaries who dispense medicines and conduct religious services.

Opium addiction does not appear to be significant among the Lao, but is found among the Meo, Yao and some Khmu. Former French administrators have estimated that perhaps sixty to seventy percent of the Meo older male population has been addicted to its use. Women seldom use it except in severe illness. Boys may be introduced to it, but their frequent use of it is frowned upon until after marriage.<sup>11</sup> Among the men it is frequently used as a medicine for all kinds of illnesses, as well as a means of committing suicide.<sup>12</sup> It is consumed by eating with lime or by smoking.

This Khmu account of an opium smoker, although somewhat moralistic in tone, perhaps mirroring the informant's European contact, nevertheless reflects the decreased productivity and depressed state of the addict:<sup>13</sup>

Some people are rich. They have enough buffalo to fill a buffalo pen. They have enough cattle to fill the space beneath a house. Other people are extremely poor and hard up. They do not have enough clothes to wear, enough shirts or trousers to put on. They go looking for work. If they make two kip they go and buy opium. If they do not have anything else to eat, they go and lie to someone and say, "Lend me money to buy opium. On such and such a day I will give it back." Time passes but they do not return the money. People who smoke opium allow their fingernails to grow long. When they go to buy opium from someone, they push their fingers into the opium. If some opium gets lodged underneath their fingernails, when they get home they take it and smoke it or more likely eat it. Sometimes these people go off to one place or another and try to steal. People of this kind are wicked and deceitful. They try to steal food, they break off other peoples' cucumbers. People do not like men of this kind. These men smoke opium in the evenings. They work only one strip of mountain rice.<sup>14</sup> Other people come home, cook food and drink.<sup>15</sup> The man who smokes opium comes home only to light his pipe. He cares only for his pipe. The wife and children cook the food. The father only boils opium. When he finishes cooking his opium he quickly looks for some fat. When he has found some fat he prepares the opium on the end of a stick over a flame. He lights the lamp over which the opium is smoked, then he takes his pipe and the ball of opium which he puts in his pipe. Then he begins to suck on it.

One man had two wives. He was very well off. Once he went to do some work with his wives and children /but instead/ he lay down and smoked opium from noon on. His wives and children went ahead of him. He delayed and then followed. He went and worked a bit and then returned home. At home the food was not cooked. He waited for his wives and children. He went in and set up his smoking equipment. Then there was someone to fetch water, to cook food. The wives and children did not like to do all the work. A person who smokes opium is dirty. He is thin and dirty.

#### Lao Traditional Medicine and the Role of the Phi

Before considering the ways in which health problems may be approached by modern techniques and facilities, the ways in which the peoples of Laos view sickness are worthy of note. Among the Lao, Khmu, Lamet and Meo, disease is usually attributed to the presence of phi pop, an evil spirit. We have seen the important role of livestock sacrifice (see Laos Project Paper No.17), one of the main purposes of which is to appease the evil spirits and so ensure a return to health.

The Meo believe that when someone is sick the phi (the Meo term is tlan) has been offended, and so the spirit has come to eat him. A shaman is then usually called. Like his counterparts in other cultures, he has his own paraphernalia and special language for addressing the spirits. An altar is erected; rice, an egg and incense are offered. The shaman sits on a stool with his hands on his knees and wears a hood over his face. To create a hypnotic atmosphere an assistant continuously strikes a gong. Then the shaman begins to shake, cry and shout. The Meo say that this is the language of the spirits and that even the shaman himself does not understand the shouting. A state of trance may last several hours or an entire day. When it is over the head of the household will ask the shaman what kinds of spirits he has managed to contact and what their wishes are.

The desires of the tlan are usually related to food, and pigs and occasional cattle appear to be their favorite dishes. The spiritual mechanics are to persuade the tlan to release the spirit of the sick person, which they are holding. Sometimes they are greedy and demand a number of pigs. Even this method may not always work, and the curing of the sick person depends on the powers of the shaman in his ability to triumph over the evil spirits. If powerful phi are involved, the person dies; if the shaman succeeds the sick person recovers. Shamans are usually paid for their services.<sup>16</sup>

Many Khmu prayers concern desires for relief from illness and are accompanied by offerings to appease the phi.<sup>17</sup>

Spirit of the forest, spirit of the mountains, spirit of the valleys, spirit of the rainbow, spirit of the water, come and eat, come and drink here. I will take care of you and feed you.<sup>18</sup> I will take care of you and feed you and your village and your household. A bottle of alcohol, a chicken, twelve banana leaf cones of tobacco I offer you. No longer make sickness or fever and put it in our bodies.

In addition to being caused by evil spirits, it is believed that illness can also be caused by offenses to benevolent protective spirits. For this reason Khmu villages are closed off to strangers about once a year, when sacrifices are made to the haw spirit. A special sign is erected outside the village notifying all comers of this fact.<sup>19</sup> If someone uninvited should enter the village at this time, it is felt that sickness will follow and that many people will die. The forest spirit can also be offended, resulting in similar catastrophe, if wood is cut near the place where people are buried.<sup>20</sup>

The Lao, too, feel that it is evil spirits which can cause illness, while good spirits or more specifically the presence of the khwan in the body preserves health. Aside from gold and silver jewelry being worn by women and children to please the khwan, this soul substance is contained and evil phi kept out of the body by tying blessed cotton cords around children's wrists or necks. The tying of these cords around the wrist is a basic part of the Lao baci ceremony, held before a person starts on a long trip, for a wedding, to cure an illness, welcome a dignitary or commemorate an important event. Holding fast the body's khwan thus either preserves or restores health.

As we have seen, Buddhism coexists with animism in the case of

sacrifices by the Lao. The two beliefs supplement one another even more clearly in the matter of illnesses caused by evil phi. A Lao suffering from "phi complaint" will at times seek the advice of a bonze instead of that of a shaman. Offerings of a banana leaf heaped with sweets, rice, candles and flowers are made on a specially erected shrine adorned with a wooden figure of the ill person. Sometimes the figure is taken down to the river and put in the water or removed to the forest and buried.

Another form of transference involves the Prabang, the sacred statue of Buddha. The golden statue is kept in the royal palace, and with special permission a person may affix a fragment of gold leaf on the part of the image analagous to that of his ailing body in the hope that this will cause the illness to disappear.

Many traditional curing practices may be noted in rural areas. A most popular technique practiced by the monks involves pouring holy water over the patient while chanting the proper Pali incantation. As a psychosomatic type of cure it has been found to be extremely effective.

A second technique is that of the "dancing doctor" - usually an elderly woman dressed in special clothing, who dances about the patient singing and waving a sword in each hand (lighted candles are alternated with the swords), by this means hoping to exorcise the evil spirit from the body. Upon her arrival a large tray is laid out in the middle of the room, containing flowers, rice, rice alcohol, eggs, boiled chickens, candles and the swords or spears. The practitioner usually wears a red cloth jacket or a piece of

red material. After the candles are lit and formulae recited, an attempt is made to identify the phi responsible for the illness. Offerings must be made not only to the phi but also to the guardian phi of the "dancing doctor" as well. This may involve the sacrifice of a chicken, ox or buffalo depending on the wealth of the family and the nature of the illness.<sup>21</sup>

The third method of treatment is by blowing over the area where pain is felt. This can either be a specialty of one practitioner or used as an alternative by a traditional herb doctor. In addition to blowing on the patient, the doctor may on occasion spit or pour water on the area of pain.<sup>22</sup>

Still another technique is for the traditional doctor to hold a betel leaf in one hand and in the other a lighted candle which he passes over the body of the patient until he has located the foreign matter causing the illness. After locating the spot, the leaf is placed over it, formulae are recited, and with a swift gesture the doctor "bites it out" of the body. If it is not visible he blows slightly over the spot in order to get at it more easily. Sometimes there are special chants to make the patient nauseous. He then regurgitates the object and is cured. Or the doctor may tickle the patient's throat to extract the chicken bone, piece of buffalo skin or pebble that may have been inserted into the body by a malevolent spirit.<sup>23</sup>

Almost every village has its own herb doctor, who has acquired his skill as part of his inheritance or from a monk in a nearby wat. He is usually a part-time specialist. His herbs, ground tor-

toise shell and buffalo horn are prepared on a flat stone in the presence of the patient. As many as twelve ingredients may go into a concoction. The type of herbs used is determined not only by the illness, but by the lunar month in which the illness first occurred.<sup>24</sup>

As the patient drinks the potion the doctor chants an appropriate incantation. If the medicine is not effective, three herbs are deleted from the formula and three new ones added. One practitioner said he occasionally jabbed his patients suddenly with a sharp knife which had the desirable effects of stimulating the patient and of creating an opening through which the bad spirit could escape.

Some herb doctors have special incantations to be used in particular treatments, such as with blowing, for people about to enter an area where an evil spirit dwells, in making medicinal formulae, in collecting herbs, or in preparing for the baci.

Several also stated that they occasionally practiced an imitative magical type of cure. One practitioner made a small roofless model of the patient's home. Inside he placed miniature clay figurines of each family member, small amounts of food, flowers, miniature candles and joss sticks for the house spirit. As he placed the appropriate medicine in the mouth of the figurine representing the ill person, he chanted the proper incantation.

In the Luang Prabang area among the Lao, and in Muong Sing among the Lu, symbolic offerings of elephants, horses, birds, oxen and buffalo are made of clay and are offered to the spirits along with dishes of meat and sweets. Similar customs exist among the

Khmu. The figurines are prepared in pairs and are presented in rectangular containers made of banana stalk garnished with red and white flowers.

A variation of this involves a shallow, square box divided into nine compartments into which are placed various foods, flags, miniature household artifacts and stylized figurines. Each compartment has a special function according to the time of year in which the illness occurs. On a separate tray betel, wine, rice and fruit are placed as offerings to the patient's khwan.

Of seven herb doctors interviewed in Vientiane Province, all claimed that in nine out of ten cases they were successful. Failure meant to them that either the spirit dealt with was too powerful or that the patient had been brought to them too late. Each believes that he has special powers as an individual and would not disclose formulae because someone else might mix a medication improperly and thus cause him to lose prestige.<sup>25</sup>

One of the ways in which a patient chooses among the types of practitioners available to him, is by divination using an egg. An egg is rolled and then stood on end on a board, and then the board is lightly tapped. If the egg remains standing, it is cracked on a clean plate without breaking the yoke. If the yoke is free of any foreign matter the illness is due to a pathological cause, and it is therefore necessary to consult an herb doctor. If the yolk is abnormally developed the illness is due to an evil spirit, and the "dancing doctor" should be sought. In case the yolk is found to contain impurities, the patient is believed to be under a spell,

and the blowing doctor is sought.<sup>26</sup>

In some villages in the vicinity of Vientiane there seems to be a lessening belief in the phi as the cause of disease. However, despite the fact that school children are taught some of the scientific causes of disease; a great majority of Lao still attribute sickness to the machinations of evil spirits. This is more or less to be expected since even in villages within commuting distance of the metropolis of Bangkok, where western medical facilities are available to a far greater degree than in Laos, the villagers tend to utilize their services only when traditional types of medicine similar to those practiced in Laos, have failed. It appears unlikely that these traditional beliefs will be completely displaced.<sup>27</sup>

Most Lao still believe that one may become ill by passing near an area where a malevolent spirit lives. If the spirit's habitat is definitely known, balls of glutinous rice are placed on a tree trunk in the vicinity in the hope that this will please him and satisfy his hunger.

Another common belief is in that of a vampire spirit (phi phaj) which lives on the blood of an individual and saps his energy. By examining the color of a patient's urine the healer can determine how much damage has been done by the spirit. Farmers in villages near Vientiane claimed that they were not troubled by the vampire spirits because the slaughterhouse in the town kept these spirits abundantly supplied with food.

Household treatment of illness consists of feeding ovaltine and yeast to the patient. For cuts, soot-covered cobwebs are used to staunch bleeding. The practice of the baci ceremony in connection with illness is dying out, as is the preventive measure of shaving the head of the one-month old child. Many villagers smoke opium to alleviate pain of arthritis or advanced tuberculosis, although their use of opium as a medicine does not appear to be as common as among the Meo. Tattooing was formerly believed to carry immunity against certain diseases and also to afford protection from knife wounds, bullets, snake bite and other accidents.<sup>28</sup>

It is important to understand that belief in the phi is not limited to villagers or even to ordinary townsfolk, but is shared by many if not most educated Lao, as well. The following incident was related by a young French-educated Lao official about a colleague of his:

My friend was directing road crews when he came upon one laborer who was not working, and subsequently fired him. It turned out that, unknown to my friend, the laborer was an evil spirit. When my friend returned home he felt very ill and had body pains but no fever. His wife was not aware that an evil spirit was responsible, so she took him to a western-trained doctor who could find nothing wrong with him. But the illness persisted, and after several days he went to see a wise old bonze who told him that his malady was an evil phi at work. This particular bonze had stronger spiritual powers than the evil spirits and was thus able to force them to leave my friend's body. After this he immediately felt better.

Analogies to the utilization of the phi, shamans and bonzes occur in our own society where western medicine is more easily available. Certain of us light candles at shrines or pray to our God the way the Lao pray to their spirits, for our medical techniques are not always certain nor are they always effective, even

though the reasons for a large number of illnesses are well understood. The case cited above might be defined in our culture as a mild neurosis with psychosomatic pains. He had recourse to a bonze the Lao equivalent of our psychiatrist or clergyman, since the local western-trained doctor was unable to resolve his complaint. Problems of this sort are common in Lao society and in these cases western medicine would not appear to be of much help.

Most Lao and tribal peoples see no conflict between a belief in the phi and western medicine, much as we can be treated by a physician and pray in church. Their belief in items such as cholera-quin pills and penicillin injections is, however, not entirely rational; rather, they believe these medicines to be endowed with a superior kind of phi. On a slightly different level this might be equated to our faith in wonder drugs; to the average American "science" is accepted pretty much on faith, in much the same way as the Laotian phi.

Most closely analogous to our medical doctors and chiropractors are the Lao herb doctors and those who cure by blowing. They are more easily available than western-trained personnel. Their services are also less expensive. The techniques of some traditional physicians are highly developed and, in common with other aspects of Lao culture, derive originally from India via Burma. These healers are used by all Lao, and even the late King of Laos in his later years occasionally availed himself of their services, in addition to those of his western-trained doctor.

Traditional medicine in Laos is based on several principles. There are, for instance, basic elements of air, water and fire, (analogous to the humors of European physicians a few centuries ago). A stomach ache is thus diagnosed as trouble with the air element, and a headache occurs when the air element rises to one's head. When one has a fever it is because the fire element is too strong. In addition, the body has thirty-two souls, one for each bodily function or intellectual facility; all these khouen must be present in order for the individual to function in a normal manner. Further, every body has nine "doors" through which an evil spirit may enter or be enticed to leave. These correspond to the natural body openings and the palms of the hands.<sup>30</sup>

Although western medicine can be spectacularly successful in treating certain illnesses, the planning of any comprehensive public health program must take the traditional techniques into account. In this connection the comments of Dr. Oudom Souvannavong, former Minister of Health and the sole fully western trained physician in Laos, are particularly significant:

As one of the more hospitable lands, Laos welcomed the first western doctors who came to practice their art on her soil, but they did not succeed in shaking the prestige of the traditional healers, the guardians of secrets handed down through many generations. Thus western and traditional medicines remain on good terms, and can be found side by side. Even in the more progressive families, it often happens that a graduate of a French medical school /in Indochina/ is seen at the bedside of a patient along with the local traditional practitioner.

After having received an injection from the western trained doctor, the patient will not fail to swallow the potion carefully prepared by the herb doctor, and will also pay attention to the incantations of the shaman.

This coexistence...may cause surprise. Should it cause concern? It is not at all certain that it would be a mistake to leave things as they are -- the worst danger arising from an attitude in direct conflict with deeply rooted customs, would be to jeopardize a medico-social program which nevertheless remains effective although developing alongside traditional practices....The practices of traditional medicine are, in most cases, perfectly harmless. If they do not cure the patient, at least they do not make his condition worse...<sup>31</sup>

An instance of the integration of the two types of medicine is provided by the case of a district official in northern Laos who summoned a western trained physician to treat his child. The doctor prescribed medication and departed, after which a traditional healer was called in. The child was given the western medicine, and clay models and other offerings were prepared for the phi.

In due course the child recovered, although the father was not sure as to which technique had brought about the cure. In any case he did not wish to take chances.

In most villages, of course, the unavailability of western techniques aids the preservation of traditional methods. Some traditional curers have adopted the use of injections, albeit not according to approved western techniques.<sup>32</sup>

Even in villages near roads and not too distant from the major towns, the local curer is often summoned, rather than taking the patient to a western trained doctor. In the summer of 1959, a little girl was dying in a village located directly on the main road about twenty miles north of Vientiane. She was emaciated and her neck was badly swollen. Her parents said she had been sick that way for nine days. In a corner was a tray heaped with offerings of rice and candles and 200 kip. On a stool several neatly folded shirts

were arranged with a number of mirrors stacked in the center. The parents said they had already paid 850 kip to the traditional curer who lived several kilometers away, and who had prescribed a concoction of herbs which the father was preparing. In addition the child was being fed rice gruel. The parents rejected an offer to take the child to a hospital in Vientiane, saying that she was too weak and that the road was long and rough. Besides, they had already made an agreement with the traditional doctor that no one else treat the child, with the understanding that if she recovered he was to receive an extra 400 kip.

In considering the various aspects of traditional medicine and the role of the phi, an important factor is nationalism, or in milder terms, an ethnic pride which reinforces traditional techniques. When viewed in these terms the village incident may be less difficult to understand. The same would be true in understanding the desire of a French-educated high ranking official to consult a bonze for an eye ailment, and the Minister of Health's positive statements about traditional practices. In modernizing the state it may well be more functional for the government to preserve traditional medicine.

#### Modern Medical Facilities

A summary of the history and organization of the Lao Ministry of Health and its recent programs is given in a publication prepared by the Public Health Division of the United States Operation Mission to Laos in 1957. Since this report is not widely available the pertinent sections are quoted here in full:<sup>33</sup>

Prior to 1945 public health matters were assigned to the office of Inspector General of Hygiene and Public Health of Indochina, which had its headquarters in Saigon. This organization had centralized services for administration, laboratories, preventative medicine, medical education, the control of drugs, etc. Unfortunately none of these facilities were located in Laos. Each state /of the Indochina federation/, including Laos, had a Director of Health and under him, provincial chiefs. All these positions were filled by Europeans.<sup>34</sup> Lao personnel were assigned as assistants to the European personnel.

With the advent of independence Laos found itself with very limited health facilities and extremely short of trained personnel. In 1946 the Ministry of Public Health was established with headquarters in Vientiane. For some time the Ministry relied heavily on French advisors but at present the Ministry is practically all Lao operated. French personnel are now assigned to the Military sections of the hospitals but they give assistance to the Ministry wherever possible in its civilian activities.

Since its founding the Ministry has attempted to re-establish the medical services available previously. At present, departments have been established but many are little past the planning stage. Each province has a Medecin-Chef who is in charge of all health facilities in his area. In the larger centers, there are hospitals which were built and operated previously by the French. In the remaining provinces, infirmaries which are little more than dispensaries serve as the medical center for the province. In the larger villages of the provinces are dispensaries operated by infirmiers. There are about 100 dispensaries at the present time. (See Table 5)

Nearly all of the medical officers in Laos received their training in either Hanoi or Phnom Penh, with the majority going to Phnom Penh. At present, and for several years past, Hanoi is not available for training. These courses are of four years duration and require graduation from the 10th year of school for entrance. Although this training is far below that of America, or of Europe, it is well adapted to conditions in Laos. At present/1957/ there are only thirty-seven men in Laos who have had this medical education. Twelve of this group are assigned to the Army and Police leaving only twenty-five to provide medical care to the whole of Laos.... In addition to this the French are assisting a number of men to obtain medical education in France.

The medical officers are assisted by infirmiers who are locally trained. These people receive a six-months course in medical techniques in Vientiane, in which the French medical staff assists. The Ministry, with the assistance of the ICA Nurse Consultant, is planning supplementary training for the infirmiers in each of the provincial hospitals.

There are no sanitary engineers or sanitarians in Laos. A small group has received short courses in health education but to date no real health education program has been developed....

The Ministry of Health, with the assistance of WHO and ICA, is carrying out a program toward the eradication of yaws in Laos. All of the activity is in the southern provinces where yaws is endemic. WHO provides the services of an expert and ICA is providing material, equipment and funds for operation. It is expected that the eradication of yaws in Laos will be realized during 1958.

The Ministry, with ICA assistance, started in 1956 a program aimed toward the eradication of malaria in six years....this is a direct attack on Laos' most important health problem and one of the most important economic problems which the country faces. Five Thai technicians under contract to ICA are working in the field with Lao technicians and the services of the ICA Malaria Consultant to USOM Thailand are being utilized to their fullest extent. Six month training courses are provided by ICA in the Malaria Training Center of Thailand for approximately fifty men per year. The Lao teams have mastered the techniques of both malaria surveys and spraying operations, but the effectiveness of the first year's program has been limited by administrative difficulties in the Ministry of Health and the Ministry of Finance.<sup>35</sup>

By 1959 there were 107 technicians working on spraying teams with an additional twenty in training in Thailand. It has been estimated that some 750,000 people have been affected.<sup>36</sup> In addition, there has been a curative program with a large-scale distribution of Diamprin tablets through various medical organizations.<sup>37</sup> Unfortunately, however, there has been little follow-up evaluation of the effectiveness of these programs. In more than one village in the Vientiane area, people complained that the mosquitoes came back after the houses were sprayed.

A similar problem has been encountered in the installation of concrete-lined wells. A number of villages in the Vientiane area received concrete sections for wells as part of a village development program supported by American aid. Sometimes a well became polluted after installation and was then abandoned, since there were no means through which the villagers could request a technician to aid them in cleaning it out. There is also a question

as to the extent to which the villagers felt it was "their" well, and therefore their responsibility.

Probably more success has been achieved with the yaws eradication campaign in southern Laos. Formerly the infection rate was estimated to be as high as forty percent.

The French have also been active in the past few years. In addition to supplying a large number of physicians (both civilian and army; see Table 6) they have been equipping the Vientiane hospital with an x-ray and surgical department and underwriting an addition to the hospital in Luang Prabang. A small school of medicine has been started in Vientiane under the sponsorship of French army physicians. In 1959 twelve students were in the first year and five in the second year of a projected four-year course of instruction given in French. The French are, of course, responsible for training almost all of the local personnel, and at present there are about a dozen Lao students in medical schools in Paris and some thirty in Phnom Penh. These are nearly all on French and Lao government scholarships and many of them have been scheduled to work with the Lao army upon their return.

With regard to training, the American aid mission has sent many Lao trainees to Thailand and several senior medical personnel for study tours in the United States. In 1959 there were 31 Lao being trained for a year in Thailand (21 in a malaria control center, and 10 in a nursing program). In addition, a number of other Lao have been sent for shorter courses.

The largest foreign medical program in terms of personnel has

been that of the Filipino organization, Operation Brotherhood. This group earlier had had considerable success in Vietnam. During 1957-1959 several teams operated in both the northern and southern parts of Laos. Each consisted of at least one doctor, a dentist, several nurses and sometimes social workers and agricultural extension personnel. Funds have been supplied by the Lao Junior Chamber of Commerce, under whose auspices Operation Brotherhood operates, along with associated groups in the United States. In the main they act as roving medical teams establishing a base at a district town or village, treating patients who come to them, and also going on horseback to outlying villages. Their function is mainly curative although whenever possible some time is devoted to public health work.

To quote from their 1959 official report,

At present Operation Brotherhood runs small field hospitals with basic surgical facilities in Ban Bane, Paksong, Attapeu and Sam Neua. It used to maintain hospitals in Phong Saly and Nam Bac, but these had to close down because of limited funds. A 42-bed hospital is almost completed in Vientiane.<sup>38</sup> A 35-bed hospital in Sam Neua stands unfinished, with some twenty makeshift beds lined up on the gravel floor.<sup>39</sup>

In addition to field hospitals, Operation Brotherhood maintains small clinics in Sayaboury, Thakhek and Vientiane. An Operation Brotherhood team has just finished helping the government look after refugees in Luang Prabang, and is still doing so in Vientiane.

Mobile teams strike out regularly from their medical bases to the remote villages, treating the sick, teaching first aid, hygiene and sanitation in homes and temples and classrooms by means of demonstrations, films and other audio-visual aids. Based in Vientiane is a small boat in which a team of doctors and nurses travel hundreds of kilometers /along/ the Mekong. In one month of 1959 the river mobile team treated 7,513 patients. And from January to October of 1959, OB treated a total of 202,490 cases all over Laos. Since the start of the operations, its medical teams have serviced more than one-third of the entire population of Laos.

OB is training young Lao men and women to help in the hospitals, to perform the basic functions of nursing, so that they can learn

to be useful to their people, and later to earn a livelihood for themselves and their families. In the village of Ban Bane for example, since the twenty midwifery trainees of OB's hospital learned from Filipino nurses how to deliver babies the safe, clean way, the infancy mortality rate has been reduced by fifty percent. Doctors give their trainees regular courses in anatomy, nursing care, first aid, public health nursing, surgical nursing and in treating medical emergencies.

It is doubtful whether public health problems are as easily solved as this report would make it appear. Nevertheless, there is clear evidence that the work of Operation Brotherhood has been much appreciated both in the rural areas and in Vientiane town itself, where their medical facilities are widely used.

Dr. Thomas A. Dooley's clinics were in Vang Vieng (northern Vientiane Province) and Nam Tha during 1957, and in Muong Sing, (Nam Tha Province) in 1958-1959. Later MEDICO, the organization he was responsible for founding, established another at Ban Houei Sai and during the present civil war this clinic has reportedly ceased functioning.

The work of both Catholic and Protestant missionaries in distributing drugs and administering elementary types of medical care should also be mentioned.

This, then, gives an idea of the formal Lao government organizations and the international groups and individuals who are trying to improve the health of the peoples of Laos. Organizations, personnel, buildings, plans and objectives are one thing. Their concrete accomplishments are quite another. Although programs and organizations have been mentioned for the country as a whole, direct observations, below, are confined to the northern and cen-

tral parts of Laos.

Let us first consider the permanent health institutions, the provincial hospitals, infirmaries and dispensaries listed in Table 5. As of 1957 the hospital in Luang Prabang had eighty beds, sixty for civilians and twenty for the military. The French aid project of construction of new buildings to house two more wards of twenty beds each was beginning to get under way. The French staff, primarily to serve the military, consisted of a surgeon, nurse and pharmacist. The Lao staff was headed by a Medecin Indo-chinois trained in Hanoi. In addition there were locally trained Lao nurses, both males and female, a laboratory technician, a midwife and some orderlies. This Lao staff can be considered reasonably competent within the limits of its restricted formal education. One male nurse showed exceptional interest in his work and was known locally as "doctor." Most of the beds were filled by urban Lao, Chinese, Vietnamese and Lao villagers, with only an occasional Meo or Khmu.

One could hardly claim, however, that the hospital operated with maximum effectiveness, particularly in emergencies. The usual work day, from seven in the morning until two in the afternoon, was the only time the staff was on duty. Theoretically some staff remained after working hours, although it frequently happened that those scheduled for duty decided not to report for work. Such an occurrence was most frequent during the important festivals and holidays.

Bureaucracy also plays a role. While the French supplied some

essential technical skills, the administration was strictly in the hands of the Lao. An example of the difficulties this can cause is the case of several men who received severe burns when a gasoline drum exploded while they were working on a road crew. The injured men were brought by jeep to the hospital, and the French surgeon was summoned. Since it was a Lao government hospital, however, the French surgeon possessed no key to the operating room. He had to go to the home of the operating-room nurse, finally returning with the key and nurse about an hour later. Meanwhile the victims of the accident lay in one of the wards writhing and groaning in agony.

Sanitation and antiseptic practice is in most cases fairly minimal. Some French claim that this is because they can no longer give orders that needles be sterilized and floors scrubbed. The Lao officials are considerably more casual about these matters.

Due to the importance of status and ethnic attitudes in Lao culture, a villager may not be too well treated, especially if he is a member of a tribal group. A nurse or medical technician with but modest training occupies a much higher social status than a villager, with the result that the latter is often regarded with disdain. Several Lao doctors trained in Indochina have been accused of embezzling funds, selling medicines and not bothering to give conscientious treatment to their patients.

Nevertheless, it would be unfair and rather short-sighted to blame the Lao completely for this state of affairs. The hospital is an institution established, built, and maintained by the French, and only recently turned over to the Lao to run. There has been no

tradition of management of such organizations, and, more important, no tradition of public service.

Definite community functions and traditions of service do exist, in serving the pagoda or in building canals, for example, but it is obvious that their functions, organizations and purposes are quite different.

A traditional herb doctor in the Luang Prabang area claimed that during an influenza epidemic he mixed potions and brought them to different pagodas where they were distributed to the population. He felt that he had gained much merit by helping people and that this was the reason he had never been ill.

It is true that members of the royal family and high local officials do not act as patrons or manifest interest in the hospital, but it would be incorrect to conclude that there is complete indifference in health matters. When they are in harmony with previously held values, a very definite interest in health questions is shown. As one might expect, ceremonies and participation in them form an important part of life in the royal capital. World Health Day is celebrated with appropriate pomp by a gathering of officials, the military and school children. At the annual Lao New Year's Fair, a special health exhibit detailing the hospital activities is presented. If such a commemorative event and celebration were held on the grounds of the hospital itself (necessitating some preliminary cleaning-up) and were accompanied by a symbolic act such as the dedication of a new piece of equipment, it might help increase the prestige of, and consequently interest in and support

for the hospital.

The Luang Prabang branch of the Lao Women's Association has begun to take an interest in the hospital, and are reported to be providing some types of public health instruction. This organization, however, is a recent western innovation.

We have seen the transportation and communication problems caused by a mountainous terrain and widely scattered population. This being the case, the role of rural dispensaries is vital on the village level. Laotian villagers have felt needs for curative drugs but virtually none, or negative reactions, toward preventive medicine. The situation in Vientiane Province is described below:

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A small dispensary can be found in some of the larger villages (population of 400 or more). However, stocks are always mildewed and depleted. The male nurse attendant has had a training course of from one month to six months; his salary is from 750 to 4000 kip per month. For all intents and purposes his training is highly inadequate.

"Thesomide" is given for nearly all illnesses. Injections are given with unsterilized hypodermic needles which are simply wiped off with a dirty cloth after use. Mouldy medicines sit on dirty shelves, in some cases medicines which require refrigeration. Medicines are received from the Vientiane hospital every six months (en principe), in insufficient quantities, which results in their being exhausted in two months.

With greater transportation difficulties in northern Laos, the problem is magnified.

In addition to the dispensaries, some rural school teachers were given medical kits (supplied by the American aid mission) with instruction booklets included. The effectiveness of these kits was limited by the teacher's lack of first aid training and the fact that no adequate provision was made for replenishment of supplies. But the kit's psychological significance should not be minimized

since the villagers attach great value to a pill -- of any kind -- and the appearance of these kits may have boosted their morale and indicated to them that the government had at least some interest in their welfare, even if the medicines did not cure their illnesses.

How do traditional village attitudes affect health services? Although the villager may eagerly accept pills or injections, he is not equally as keen about being treated at a hospital. The death rate in Lao hospitals is high, much as ours was not too many generations ago, when hospitals were shunned for approximately similar reasons. Then, too, there is the matter of the phi -- for some spirits are those of the dead and can be evil as well as benevolent. Obviously, a site where many deaths occur has a high quota of phi and is not thought a prudent place to stay.

Another consideration is that the Lao do not have a sense of urgency about health problems, since many diseases are accepted as normal.<sup>41</sup> This combined with the fact that they often prefer to try traditional treatment first means that they sometimes come to a hospital or dispensary only as a last resort. These attitudes exist on all strata of Lao society. During a visit to Luang Prabang an Operation Brotherhood dentist was asked to call on the son of a prosperous and high-ranking official. The young man was said to have a toothache. This turned out to be three completely rotted teeth which partially disintegrated even with the gentlest probing. The dentist extracted only two of them, explaining that removal of the third might cause severe bleeding and invite infection. The son, a lycee student, was given antibiotics, vitamin pills and instruc-

tions for gargling, and was asked to see the dentist in a week. He never came, and when his father was approached, he said the son had left on a trip. He did not seem to feel that the remaining rotted tooth presented any menace to his son's health. This incident, while not of importance in itself, is significant in indicating attitudes. The official in question, occupying an important administrative position, did not appear to favor, for example, extensive government expenditures for preventive medicine.

Related to this is the Lao attitude toward death. In many other cultures death is sometimes regarded as the end of existence; in Lao Buddhism it is merely the prelude to rebirth as another person or other form of life. Death therefore is not the end, but a stage in the cycle of rebirths. It would be something of an exaggeration to describe Lao funerals and cremations as joyous affairs; however, they are accompanied by merrymaking such as card playing and singing, and it is considered poor manners to show grief openly. While funeral feasts are not unknown in the western world, there is almost always a tragic undertone. This is not true in Laos. The deceased are missed but they are not mourned.

## FOOTNOTES

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1. Reinach, 1901:105-107.
2. Dooley, 1958:90.
3. Op. cit., 34-35.
4. This is widespread throughout Southeast Asia.
5. Boiling water in the latter period is part of the Lao custom u fai, meaning literally "by the fire," when the new mother must lie beside a hot fire for about twenty-five days after delivery, inhaling fumes from the boiling water and consuming large quantities of herb tea. Like the cutting of the umbilicus with a sharp piece of bamboo, this is a widespread and evidently very old culture trait throughout Southeast Asia.
6. During the war when the Thai army occupied the side of the Mekong opposite Luang Prabang town, the civil governor forced villagers there to build latrines. These were abandoned as soon as he left.
7. Bertholet, 1958:26-27.
8. Kaufman, 1956:13.
9. Dooley, 1958:116.
10. Holloway, 1957:16.
11. Barney, 1957:33, and Iwata, 1959.
12. Although no precise information is available, while not uncommon among the Meo, as a general impression suicide is almost nonexistent among the Lao. Two Lao lovers committed suicide in Luang Prabang in 1958, a very rare occurrence.
13. Smalley, 1952:54
14. This is a strip of land wide enough for two or three people abreast to work on.
15. Among the Khmu both men and women do the cooking although men are considered the better cooks.
16. The sacrifice may be determined by the wealth of the household or the prestige of the ill person. Usually a chicken is first offered, and larger sacrifices follow if necessary. Dogs are also used for this purpose. In addition paper "money" especially prepared for the spirits is also offered. Sacrificial blood is poured on a paper image of the sick person. The image is then buried in the doorway. At the conclusion of the ceremony, the shaman casts the split horn of a cow on the ground. The manner in which the two pieces fall determine whether the person will recover. Barney, 1957:41-42.
17. Smalley, 1952:54
18. The Khmu always refer to "taking care of" spirits or "raising" them; this is the same verb used for bringing up children or keeping chickens.
19. It is a disc of plaited bamboo strips affixed to a stick and stuck in the ground. Similar signs are used by many people of Southeast Asia.
20. Unlike the Meo, the Khmu bury their dead.
21. Souvannavong, 1959:303. For a detailed list of practices and treatments derived in part from the study of Tai Dam manuscripts, see P.B.Lafont, "Pratiques Medicales des Thai Noirs du Laos de l'Ouest," Anthropos, Vol. 54, Fasc. 5-6:817-840.
22. These techniques are often used by the Lao officials, particularly in more remote areas, as well as by the villagers.
23. Souvannavong, 1959:301.
24. A traditional herb doctor in Luang Prabang felt that his own horoscope was important in determining the effectiveness of his medicine, and that the medicines must be prepared on certain days, at particular times during the day, and while facing in a certain direction. Much of the effectiveness of the traditional healer is said to depend on his knowledge of the roots, leaves, bark, honey, alcohol and stones he uses in his preparations, said to be based on Lao manuscripts from northern Thailand, derived from practices originating in Burma and transmitted to Luang Prabang via Chieng Mai.
25. Kaufman, 1961.
26. Souvannavong, 1959:302.
27. Even in China, where violent social revolutions have uprooted many traditional patterns, indigenous medical techniques have been retained as a concession to nationalism. The tremendous psychological potency of highly valued and long-established techniques for treating disease cannot be denied, to the extent that western-trained doctors are obliged to take courses

in the traditional practices, and these ancient techniques are also taught at modern medical schools. The two systems of treatment are often combined in Chinese hospitals.

Peggy Durdin, "Medicine in China: A Revealing Story," New York Times Magazine, February 28, 1960.

28. Kaufman, 1961.
29. For many years King Sisavang Vong had an official herb doctor who was given rank (Phya). This curer had inherited the position from his father, who had served the late King's father. In his 70's when interviewed, he continued to treat the King on an informal basis.
30. Common ailments such as dysentery and arthritis would be ascribed to entry of phi via the anus and palms of the hands. Once the spirit enters the body it becomes hungry and must eat. The traditional practitioner may prescribe that a small wad of rice be placed at the corresponding entrance in order to entice the spirit out. In the event that the patient becomes delirious, it is considered to be the spirit speaking. Kaufman, 1961.
31. Souvannavong, 1959:301. A similar attitude was held by Dr. Tom Dooley, who found that by cooperating with the local traditional healers he was able to work effectively, but that without their consent he could not function:  
"Before we came to Nam Tha, and perhaps from time immemorial the witch doctors had ruled supreme. No one ever questioned their wisdom or the power of their nostrums or incantations. But now the wretched people were torn between the magic of the traditional sorcerers and the white medicine-men.  
Finally the witch doctors put a 'hex' on our hospital. They surrounded the compound with little mats of woven bamboo mounted on short posts stuck in the ground....No one, no matter how desperately ill, would come near our hospital for help. These witch-doctors were all respected village elders.... Instead of antagonizing the witch-doctors...we began to treat them as 'colleagues in the healing arts' who practiced a somewhat different discipline of medicine with which we disagreed and yet respected." Dooley, 1958:78-79
32. Injections are believed to have almost magical powers. A Meo in Luang Prabang, when asked what he considered to be his most pressing needs, replied that he would like to have some medicine to inject in order to cure diseases such as pneumonia which were troubling his village. This attitude has been reinforced by the wide use of injections by missionaries and others, which often have dramatic effects (i.e. by the quick effectiveness of penicillin for yaws and vitamin injections for villagers suffering from severe malnutrition) on people

who have never before been treated with drugs.

33. Holloway, 1957:17-19.
34. Health programs appear to be one of the most successful legacies of the French in terms of impact on the rural population. Very often villagers, especially in more isolated villages, will assume that a visiting white foreigner is a doctor and will ask for medication for various illnesses and infections.
35. In blunter language this represents varying amounts of indifference compounded by misappropriation of funds for personal profit.
36. Previously infection rates were said to be as high as eighty percent among children examined. It would be a mistake, however, to assume that malaria has been completely eradicated.
37. Most of the efforts have concentrated in southern Laos, although in 1959 preparations were being made to initiate work in the Luang Prabang area.
38. This hospital built with a \$100,000 grant from John D. Rockefeller III, opened in July, 1950.
39. Operations in Phong Saly and Sam Neua ceased during the 1960-1961 civil war and the subsequent Pathet-Lao reoccupation. Although no confirmatory information is available it is assumed that the facilities in Xieng Khouang were also closed.
40. Kaufman, 1956:13.
41. This acceptance of suffering and disease is at least in part related to Buddhist beliefs equating existence with suffering.

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